UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

STUDENT SELECTION MODEL USING
FUZZY ANALYTIC HIERARCHY PROCESS(FAHP)

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TABLE OF CONTENTS

ABSTRACT

Recently, there are many students from high school are not able to further their study in university. Therefore, UITM has built a program to help those students to continue their studies in high level education. The program is called Mengubah Destini Anak Bangsa. MDAB is a program that provides opportunities for students to pursue their study in university even though they are not qualify. This is due to low grade and financial problems. The current selection method for MDAB students is using manual method which tends to bias and time consuming.Therefore, in this study, the systematic method is developed by using Fuzzy Analytical Hierarchy Process (FAHP). This method is suitable to solve Multi Criteria Decision Making (MCDM) problems. There is two criteria and eight sub-criteria selected which are Family Income, English Language, Math/Add Math, Principles of Accounting, Science or Biology or Physic or Chemistry, Economic, History, Malay Language, and Business. The Questionnaire is developed based on selected criteria and 10 experts from different fields are requested to answer the questionnaire. The pairwise comparison matrix is constructed based on opinions from experts. Furthermore, Chang Extent Analysis is used to solve the selection process to calculate weighted vector for criteria and sub-criteria. The selection score model is developed based on global weight and to ease the process of calculation the excel spreadsheet command is constructed. Then the result is compared by using manual system and FAHP. The results shows by using manual system and Fuzzy AHP there is no differences for selection process. This method provide more systematic selection process by introducing total score for each students. The selection students based on the highest score obtained through ranking the score.

Keywords : FAHP, MDAB, Chang Extent Anlysis, MCDM

1 INTRODUCTION

In developing countries like Malaysia, most of students in secondary school have intentions to further education to achieve their dreams. Furthermore, according to Kabir & Ahsan Akhtar Hasin (2012) stated that The Ministry of Education has established a system online such as UPU(Unit Pusat Universiti) online is a process the intake of student for all universities except University Islam Antarabangsa Malaysia (UIAM) and University Technology Malaysia (UTM). For further education, the students need to apply UPU forms online and this system also will evaluate student intake based on the requirement in each universities.

On the other hand, there are many students get low grade in their results have difficulties to enter the universities because their results not satisfied in qualification universities.In addition, many of SPM leavers who have a problem that does not credit in SPM (Sijil Peperiksaan Malaysia) certificate for English and Mathematics subjects. Besides that, there is also students cannot continue their studies because their families have financial problem and do not afford incur the expenses of students in universities. Next, each university have a limited capacity for student intake who the students belong low grade result do not afford compete with excel students.

According to Tarmudi et al. (2013) University Technology Mara (UITM) has created the programme of MDAB (Minggu Destini Anak Bangsa) since July 2010, for Malay and Bumiputera students. This programme could help these students to solve the problem of disqualified students to continue their studies in university. So that, for the requirement of MDAB programme, the student must be passed at least achievement of three credit included Bahasa Melayu and a grade D for English paper at SPM.

However, the selection of student in MDAB programme is the important activity in order to approach the objective in university which is to meet the decision maker's demand. The selection of student in this programme procedure takes longer time and become more complicated

1